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<b>(21) International Application Number:</b> PCT/US98/03978 <b>(22) International Filing Date:</b> 2 March 1998 (02.03.98) <b>(30) Priority Data:</b> 60/033,811 7 March 1997 (07.03.97) US Not furnished 15 January 1998 (15.01.98) US <b>(71) Applicant:</b> PENNZOIL PRODUCTS COMPANY [US/US]; 700 Milan Street, Houston, TX 77002 (US). <b>(72) Inventors:</b> MORRISON, David, S.; 23 Grey Birch Place, The Woodlands, TX 77381 (US). LU, Lin; Apartment 2009, 2100 Tanneyhill, Houston, TX 77008 (US). RAY, Robert, H.; 13445 Ella Boulevard #813, Houston, TX 77014 (US). <b>(74) Agents:</b> PRICE, Robert, L. et al.; McDermott, Will & Emery, Suite 300, 99 Canal Center Plaza, Alexandria, VA 22314 (US).	<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i> <i>With amended claims.</i>  <b>Date of publication of the amended claims:</b> 12 November 1998 (12.11.98)	
<b>(54) Title:</b> HYDROCARBON GELS AS SUSPENDING AND DISPERSING AGENTS AND PRODUCTS  <b>(57) Abstract</b>  Hydrocarbon gels comprising from about 0.1 to about 50 percent on a weight basis of diblock, triblock, multiblock and/or radial block copolymers based on synthetic thermoplastic rubbers or mixtures, in a mixture with a hydrocarbon, one or more hydrocarbon-soluble substances, or mixtures thereof, which are useful as suspending or dispersing agents for solids and/or liquids.		

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## AMENDED CLAIMS

[received by the International Bureau on 18 September 1998 (18.09.98);  
original claims 1-21 replaced by amended claims 1-20 (5 pages)]

1. A hydrocarbon gel composition having solids or liquids suspended or dispersed therein, said composition comprising:

5 (a) from about 20 to about 95 weight percent of a hydrocarbon, optionally comprising one or more hydrocarbon-soluble substances;

10 (b) a polymeric gel component comprising from about 0.1 to about 50 weight percent of one or more diblock copolymers, one or more triblock, radial block and/or multiblock copolymers, or a mixture thereof, comprising from about 0 to about 100 weight percent said of one or more diblock copolymer and from about 100 to about 0 weight percent of said one or more triblock, radial block and/or multiblock copolymer;  
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(c) a suspended or dispersed component comprising from about 0.01 to about 75 weight percent of one or more solids and/or liquids suspended or dispersed therein, wherein said liquids are selected  
20 from the group consisting of water containing one or more water-soluble materials, glycerin, propylene glycol, butylene glycol, alcohols, acids, surfactants, emulsifiers, polyglycerols, ethers, fluorinated compounds, perfluoropolyethers, silicones, silicon-  
25 containing compounds, and mixtures thereof.

2. A gel composition according to claim 1 wherein the hydrocarbon has a vapor pressure of up to 600 mg Hg at 20 °C.

3. A gel composition according to claim 1 wherein said gelling component comprises about 0.1 to 25 weight percent of one or more triblock, radial block and/or multiblock copolymers, and from about 70  
5 to about 99.9 weight percent of one or more diblock copolymers.

4. A gel composition according to claim 1 which comprises about 0.1 to 10 weight percent of one or more triblock, radial block, and/or multiblock copolymers, and from about 70 to about 99.9 weight percent of one or more diblock copolymers.

5. A gel composition according to claim 1 wherein the total weight of said polymeric gel component in said hydrocarbon is from about 0.5 to about 30 weight percent.

6. A gel composition according to claim 1 wherein said hydrocarbon is selected from the group consisting of mineral oils, mineral solvents, petrolatum, waxes, mineral spirits, synthetic hydrocarbons, animal oils, vegetable oils, and mixtures thereof.

7. A gel composition according to claim 1 which also comprises one or more hydrocarbon-soluble substances selected from the group consisting of esters, waxes, petrolatums, resins, and mixtures thereof in amounts of up to 50 weight percent, based on the total weight of the composition.

8. A gel composition according to claim 1 wherein said solid or liquid suspended therein comprises a solid and/or non-hydrocarbon oil liquid which is dispersed in said gel and remains substantially suspended or evenly dispersed therein.

9. A gel composition according to claim 8 wherein said solid or liquid comprises a member selected from the group consisting of personal care ingredient, agricultural substances and veterinary medicines.

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10. A gel composition according to claim 9 wherein said personal care ingredient comprises pigmented makeup, sunscreens, or sunblocks.

11. A gel composition according to claim 9 wherein said agricultural substances comprises pesticides, fungicides, or herbicides.

12. A gel composition according to claim 9 wherein said veterinary medicine comprises dewormers, vaccines or other medicines.

13. A gel composition according to claim 1 which also comprises an effective amount of one or more stabilizers, preservatives, antioxidants, phosphorescing substances, or colorants.

14. A gel composition according to claim 1 in the form of a soft flowable gel.

15. A gel composition according to claim 1 in the form of a stiff self-supporting gel.

16. A water-in-oil emulsion comprising a gel composition according to claim 1 and sufficient water to form said water-in-oil emulsion, and one or more emulsifying agents.

17. A water-in-oil emulsion comprising a gel composition according to claim 1 and sufficient water to form said oil-in-water emulsion, and one or more emulsifying agents.

18. A gel composition according to claim 1 wherein said polymeric gel component comprises a blend of an S-EB-S triblock copolymer and an S-EP diblock copolymer.

19. A gel composition according to claim 1 wherein said suspended or dispersed component is a solid selected from the group consisting of zinc oxide, coated zinc oxide, surface-treated zinc oxide, titanium dioxide, surface-treated titanium dioxide, phosphorescent substances, molybdenum oxide, zinc sulfide, copper-doped zinc sulfide, graphite, explosive materials, pesticides, herbicides, fungicides, air-sensitive chemicals or reagents, moisture-sensitive chemicals or reagents, boron nitride, iron oxides, talc, mica, plastics, polymers and polymeric materials, silica, silicon dioxide, aluminum oxide, inorganic materials, organometallic compounds, metal particles, phosphorescent or fluorescent materials, medical materials such as antibacterials, antibiotics, and anesthetics, glass, clays, gums, capsules containing various ingredients, starch, modified starches, and mixtures thereof.

20. A gel composition according to claim 1 wherein said suspended or dispersed component is a solid selected from the group consisting of zinc oxide, coated zinc oxide, surface-treated zinc oxide, titanium dioxide, surface-treated titanium dioxide, phosphorescent substances, molybdenum oxide, zinc sulfide, copper-doped zinc sulfide, graphite, explosive materials, pesticides, herbicides, fungicides, air-sensitive chemicals or reagents, moisture-sensitive chemicals or reagents, boron nitride, iron oxides, talc, mica, plastics, polymers and polymeric materials, silica, silicon dioxide, aluminum oxide, inorganic materials, organometallic compounds, metal particles, phosphorescent or fluorescent materials, medical materials such as antibacterials, antibiotics, and anesthetics, glass, clays, gums, capsules containing various ingredients, starch, modified starches, liquids selected from the group consisting of water, water containing one or more water-soluble materials, glycerin, propylene

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glycol, butylene glycol, alcohols, acids, surfactants, emulsifiers, polyglycerols, ethers, polar esters, fluorinated compounds, perfluoropolyethers, silicones, silicon-containing compounds, and mixtures thereof, and mixtures of solids and liquids.

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